electrically isolating said deposits of said conductive material so as to form said layer structure.

24. The process of claim 23, wherein the field regions are regions of an insulator layer forming part of said patterned substrate.

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25. The process of claim 23, and further comprising at least one additional operation of depositing conductive material after removing said conductive material and before electrically isolating said deposits.

26. The process of claim 25, and further comprising electro-etching said conductive material deposited by each additional operation of depositing.

27. The process of claim 23, wherein said potential is applied between said surface of said patterned substrate and an anode in the electrolyte solution.

28. The process of claim 23, wherein said patterned substrate includes an insulator layer and a barrier layer overlying said insulator layer, wherein said field regions are defined on said insulator layer, and wherein said deposits of said conductive material are electrically isolated by removing said barrier layer from said field regions.

29. The process of claim 23, and further comprising at least one additional operation of depositing conductive material before electrically isolating said deposits.

30. The process of claim 29, and further comprising annealing said deposits after said at least one additional operation of depositing conductive material.

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31. The process of claim 23, and further comprising annealing said deposits after electrically isolating the deposits.

32. The process of claim 23, wherein electrically isolating said deposits is performed by chemical mechanical polishing.

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33. The process of claim 23, wherein removing said conductive material is performed by electro-etching the film of the conductive material.

34. The process of claim 33, wherein the film is electro-etched by inverting a polarity of said potential.

35. The process of claim 23, wherein electrically isolating said deposits is performed by reactive ion etching.

36. The process of claim 23, wherein electrically isolating said deposits is performed by wet etching.

37. The process of claim 23, wherein said conductive material is any of Cu, doped Cu, a copper alloy, Pt, Ag, Au, Pd, Ni, a Pb-Sn alloy, a lead-free solderable alloy, and a magnetic alloy.

38. The process of claim 23, wherein the film is deposited out of said electrolyte solution and polished simultaneously.--